

Status of the MiniBooNE Horn

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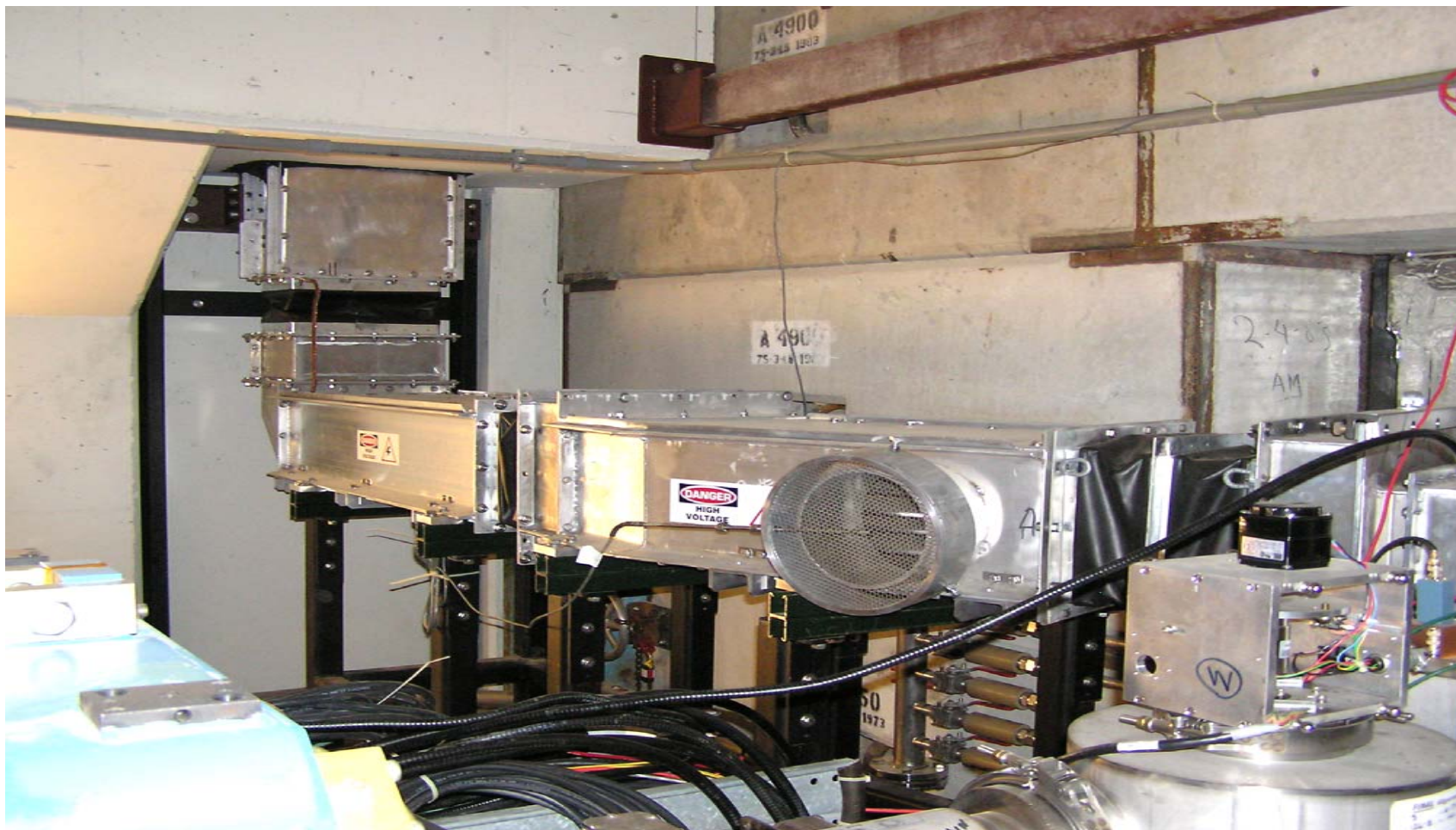
AEM

8/2/04

Chronology of Events

- ❑ On Friday July 24 the Horn PS tripped on a Ground Fault indication.
- ❑ The trip limit was raised 25% and continued running till Sunday afternoon when we had another trip.
- ❑ After that we run the horn at a reduced current (mostly $\frac{2}{3}$ of the operational current) till Wednesday 07/28 when we shut down to diagnose the problem.
- ❑ On Wednesday we isolated the PS from the striplines/horn and determined that we had a ground fault with a DC Impedance of less than 1ohm.
- ❑ On Thursday 07/29 we isolated the striplines and determined that the short is in the horn box. We had no current run through the horn since then.

Stripline Connections to the Horn



Disconnecting the stripline connections for the fault measurements



Horn Status

- ❖ Since the ground fault is in the horn box we have no way of fixing the problem and we will have to replace the horn.
- ❖ There is a way to reduce the actual ground fault currents and force most of the fault current to come back through the stripline cover plates to the PS allowing us to run a little longer. This plan has to be cleared with Electrical Safety first.
- ❖ There are a few things that we would like to do to diagnose the cause of the problem.
- ❖ Our spare horn and target will be ready in a couple of weeks.
- ❖ Many Thanks to the EE support for helping us diagnose the problem!

Horn History

- The MiniBooNE prototype horn was pulsed for the first time on 07/27/01 in MI-8.
- Completed 11M pulsed at full current (170KA) and at 5 Hz average rep rate on 02/12/02.
- Since Aug. 02 we have accumulated an additional 85M pulses at full current with beam.
- The Horn was designed for 200M pulses (2 years of running at 5×10^{12} ppp and 5Hz).